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(54) Title: MRAY GENE AND ENZYME OF *PSEUDOMONAS AERUGINOSA*

(57) Abstract: Polynucleotides and polypeptides of *Pseudomonas aeruginosa* MraY, an enzyme involved in bacterial cell wall biosynthesis, are provided. The recombinant MraY enzyme is catalytically active in the first step of the membrane cycle of peptidoglycan biosynthesis. Also provided are proteins encoded by the sequences, host cells expressing the recombinant enzyme, and probes and primers.